

AMENDMENTS TO THE CLAIMS

1-159. (Canceled)

160. (Currently amended) An array of ~~transfected eukaryotic cells~~ comprising a surface having ~~an array of~~ at least 96 locations, ~~said array having a density of at least 100 locations per square centimeter~~, wherein each location comprises eukaryotic cells that are disposed on a feature comprising one or more defined nucleic acid molecules in a discrete location, wherein the nucleic acid molecules are so affixed to the surface that the cells become transfected with the one or more defined nucleic acid molecules when the array is maintained for a suitable period of time, thereby forming an array of transfected eukaryotic cells positioned at discrete locations on the surface.

161. (Previously Presented) The array of claim 160, wherein the one or more defined nucleic acid molecules are non-viral.

162. (Currently Amended) The array of claim 160, wherein, in at least one ~~feature location~~, the one or more defined nucleic acid molecules are contained in a vector.

163. (Currently Amended) The array of claim 160, wherein, in at least one ~~feature location~~, the one or more defined nucleic acid molecules are contained in a plasmid expressed in the eukaryotic cells.

164. (Currently Amended) The array of claim 160, wherein, in at least one location, the one or more defined nucleic acid molecules encode polypeptides ~~that are expressed in the eukaryotic cells.~~

165. (Previously Presented) The array of claim 160, wherein the cells are disposed on the surface at a density of $0.3 \times 10^5/\text{cm}^2$ to $3.0 \times 10^5/\text{cm}^2$.

166. (Currently Amended) The array of claim 160, wherein, in at least one ~~feature~~location, the one or more defined nucleic acid molecules are DNA.

167. (Currently Amended) The array of claim 160, wherein, in at least one ~~location, the eukaryotic cells are transfected with~~ feature, the nucleic acid molecules comprise at least two different nucleic acid molecules.

168. (Currently Amended) The array of claim 160, wherein the features are produced by using a microarrayer to deposit the nucleic acid molecules on the surface ~~locations have a density of at least 1000 different locations per square centimeter.~~

169. (Currently Amended) The array of claim ~~160~~ 168, wherein the features comprise RNA ~~locations have a density of at least 10,000 different locations per square~~ ~~centimeter.~~

170. (Currently Amended) The array of claim 160 ~~168~~, wherein the features comprise nucleic acid molecules that interfere with the function of an endogenous gene when introduced into the eukaryotic cells ~~locations have a density of at least 100,000~~ ~~different locations per square centimeter.~~

171. (Currently Amended) The array of claim 160 ~~168~~, wherein the nucleic acid molecules are capable of inducing post-transcriptional gene silencing when present in the eukaryotic cells. ~~locations have a density of at least 400 different locations per square~~ ~~centimeter.~~

172. (Currently Amended) The array of claim 160 ~~168~~, wherein the nucleic acid containing features are not sequestered in individual wells ~~locations have a density of at~~ ~~least 700 different locations per square centimeter.~~

173. (Currently Amended) The array of claim 160 ~~168~~, wherein the array is formed by adding cells and a transfection reagent to a surface comprising a plurality of features each of which comprises one or more defined nucleic acid molecules affixed to the surface in a discrete, defined location. ~~locations have a density of at least 289 different~~ ~~locations per square centimeter.~~

174. (Currently Amended) The array of claim ~~160~~ 168, wherein the surface comprises up to 10,000-15,000 features. ~~have a density of at least 625 different locations per square centimeter.~~

175. (Currently Amended) The array of any of claims 160 and 168-174, wherein the features comprise a carrier ~~locations have a density of at most 1,000,000 different locations per square centimeter.~~

176. (Currently Amended) The array of claim 160, wherein, in at least one feature~~location~~, the one or more defined nucleic acid molecules encode a double-stranded RNA molecule.

177. (Currently Amended) The array of claim 160, wherein, in at least one feature~~location~~, the one or more defined nucleic acid molecules has a modified base or backbone.

178-236. (Canceled)

237. (Currently Amended) The array of claim 160, wherein ~~said defined nucleic acid molecules comprises~~ at least 10 different nucleic acid sequences are present on said surface at discrete locations.

238. (Currently Amended) The array of claim 237, wherein ~~said defined nucleic acid molecules comprises~~ at least 100 different nucleic acid sequences are present on said surface at discrete locations.

239. (Currently Amended) The array of claim 238, wherein ~~said defined nucleic acid molecules comprises~~ at least 1000 different nucleic acid sequences are present on said surface at discrete locations.

240. (Currently Amended) The array claim 160, said array comprising ~~locations in which eukaryotic cells are co-transfected with~~ features comprising two or more different defined nucleic acid molecules.

241. (New) The array of claim 160, wherein the features comprise a protein.

242. (New) The array of claim 160, wherein the features comprise a lipid.

243. (New) The array of claim 160, wherein the features comprise fibronectin.

244. (New) The array of claim 160, wherein the surface comprises a cationic moiety.

245. (New) The array of claim 160, wherein the surface comprises a capture moiety.

246. (New) The array of claim 160, further comprising cell culture medium.